

BOGATYREV, V.

Workers of the trust No.7 of the Administration for Housing and Public Construction in the City of Moscow struggle for lowering construction costs. Na stroi. Mosk. 1 no.8:1-5 Ag '58. (MIRA 11:10)

1.Zamestitel' glavnogo inzhenera tresta Mosstroy No.7.
(Moscow--Construction industry--Costs)

BOGATYREV, V. (pos.Stalino, Andizhanskoy oblasti, Uzbekskoy SSR)

Our pensioners group. Okhr.truda i sots.strakh. 3 no.2:54
F '60. (MIRA 13:6)

1. Rukovoditel' pensionnoy gruppy komissii sotsial'nogo strakhovaniya Stalinskogo khlopkozavoda.
(Uzbekistan) (Stalino--Pensioners)

L 04313-67 EWP(k)/EWP(h)/EWT(d)/EWP(l)/EWP(v)/EWP(t)/ETI IJP(c) JD/HW

ACC NR: AP6018389

(A)

SOURCE CODE: UR/0133/66/000/006/0537/0538

AUTHORS: Borisov, S. I. (Doctor of technical sciences); Verkhovod, V. K. (Engineer);
Samoylenko, V. A. (Engineer); Bogatyrev, V. A. (Engineer)

ORG: none

TITLE: Manufacture of eight-finned steel pipes on hydraulic horizontal presses

SOURCE: Stal', no. 6, 1966, 537-538

TOPIC TAGS: metal tube, metal pressing, metal press, metal forming

ABSTRACT: A method for the manufacture of finned steel pipes (for the chemical industry) by using horizontal hydraulic presses was developed at the Southern Pipe Plant Nikopol' (Nikopol'skiy yuzhnotrubnyy zavod). The experimental work was based on theoretical calculations published earlier by V. K. Verkhovod, A. Ye. Pritomanov, and M. I. Chepurko (Issledovaniye protsessa istecheniya metalla pri pressovanii profil'nykh trub, Sb. Proizvodstvo trub, vyp. 14, Izd. Metallurgiya, 1964). The compression stress was calculated after S. I. Borisov and A. Ye. Pritomanov (Analiticheskiy metod opredeleniya usiliya pressovaniya stal'nykh trub, Sb. Proizvodstvo trub, vyp. 5, Metallurgizdat, 1961) with the formula

$$P = \left[(c_M - c_r k) e^{\frac{4/D_k L_{r,3}}{D_k^2 - d_r^2}} + c_r k \right] F_r$$

Card 1/3

UDC: 621.774.38

L 04313-67

ACC NR: AP6018389

6
where σ_M is the tension at the die, σ_T - flow limit of the pipe material, k - a coefficient which depends on the elongation coefficient, f - friction coefficient, D_K - container diameter (175 mm), $L_{r.3}$ - length of compressed bushing, d_T - inner pipe diameter, and F - cross-sectional area of compressed bushing. It was found that the theoretically calculated compression stresses were in good agreement with the experimental data. A schematic of the construction and calibration of the dies is presented (see Fig. 1). A recent order for 48 x 4 mm (with 105-mm fin diameter) pipes has been successfully completed. V. S. Nosko, A. I. Lysenko, O. P. Drobich, A. I. Tyazhel'nikov, N. S. Kirvalidze, and N. S. Yakimenko participated in the experimental work.

SUB CODE: 13 / SUB DATE: none / ORIG REF: 002

Card 2/3

L 04313-67

ACC NR: AP6018389

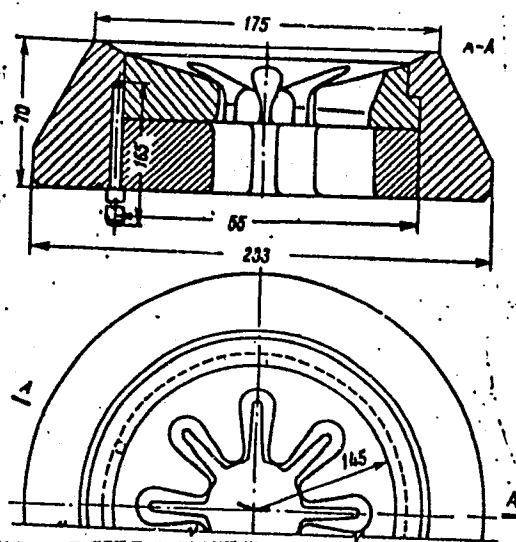


Fig. 1. Construction and calibration of profile die.

Orig. art. has: 3 graphs and 5 equations.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 002

Card 3/3 *gd*

SOV/122-59-3-13/42

AUTHORS: Rotenberg, M.I., Semenov, R.A. (Engineers) and Bogatyrev, V.G.

TITLE: An Automatic Installation for the Inspection of Bearing Inserts by the Ultrasonic Method (Avtomatizirovannaya ustanovka dlya kontrolya vkladyshey ul'trazvukovym metodom)

PERIODICAL: Vestnik Mashinostroyeniya, 1959, Nr 3, pp 43-45 (USSR)

ABSTRACT: To inspect bi-metal bearing inserts for full adhesion with the anti-friction layer, ultrasonic detection by probes with rubber diaphragms was used at the Kolomna Diesel Locomotive Works (Kolomenskiy Teplovozostroitel'-nyy Zavod) "Imeni V.V.Kuybysheva" as described in "Vestnik Mashinostroyeniya, 1957, Nr 9. This method depended on the operator's skill. The rubber diaphragm had a short service life. An insert of 250 mm diameter and 150 mm length took 15 minutes to inspect. After testing various modifications, the present authors have developed an automatic installation consisting of an ultrasonic detecting unit, type 86IM2, an electronic signal emitter, a rotating bath filled with liquid and a lifting mechanism. After immersing the insert to be

Card 1/3

SOV/122-59-3-13/42

An Automatic Installation for the Inspection of Bearing Inserts
by the Ultrasonic Method

inspected into the liquid bath, the probes attached to fittings on a rack are lowered to the level of the bottom face of the insert. When the bath is rotated and the rack displaced vertically, the ultrasonic ray describes a helical line in relation to the insert. A defect is recorded on the cathode ray tube screen of the ultrasonic unit and simultaneously by the electronic signal emitter which lights up an indicator lamp. The block diagram of the installation is shown in Fig 2 and a description of the general layout is given. Water has replaced transformer oil as a bath liquid, because the splashing of the oil spoils the cleanliness of the installation. This necessitated a special probe design. Moreover the demand for increased sensitivity called for a replacement of quartz plates with barium titanate having a much greater piezo-electric effect. The 12 mm diameter, 1 mm thickness barium titanate plate is bonded to the probe face with phenolic or epoxide resin. The probe design is shown in cross-section in Fig 3. An output signal of

Card 2/3

SOV/122-59-3-13/42
An Automatic Installation for the Inspection of Bearing Inserts
by the Ultrasonic Method

several volts is obtained which deflects the cathode ray and is used as an input to the electronic signal emitter, the circuit of which is shown in Fig 4. The emitter constitutes a trigger system. After triggering, the circuit is returned to the initial state by a push button. The signal emitter was necessary because of the excessively short duration of a defect impulse, incapable of operating an electromagnetic relay. To detect defects below 0.8 cm², special step-down probe fittings are required (illustrated in Fig 5).

Card 3/3 There are 5 figures, including 1 photograph.

ACC NR: AM6032824

(A)

Monograph

UR/

Dubovskiy, B. G.; Kamayev, A. V.; Kuznetsov, F. M.; Vladikov, G. M.; Gurin, V. N.;
Murashov, A. P.; Markelov, I. P.; Kochergin, V. P.; Vaymugin, A. A.; Sviridenko,
V. Ya.; Diyeu, L.V.; Bogatyyev, V.K.; Vavilov, V. V.; Frolov, V. V.

Critical parameters of systems with fissionable materials and nuclear safety; a
handbook (Kriticheskiye parametry sistem s delyashchimiya veshchestvami i
yadernaya bezopasnost'; spravochnik) Moscow. Atomizdat. 1966. 225 p. biblio.,
diagrams, tables. 9000 copies printed.

TOPIC TAGS: nuclear safety, nuclear reactor, homogeneous nuclear reactor,
heterogeneous nuclear reactor, chain reaction

PURPOSE AND COVERAGE: This handbook is intended for specialists concerned with
the problems of assuring nuclear safety as well as for persons calculating, de-
signing, operating, and studying the physics of nuclear reactors of various types,
as well as for students in associated departments. The book discusses methods of
creating and maintaining conditions which will exclude the possibility of an
accidentally chain reaction during the processing, storage, and transportation of
fissionable materials. The book is based mainly on the results of studies pub-
lished before 1965. In addition to information on critical parameters of systems
with fissionable materials, the authors considered it useful to include in the
handbook the fundamental concepts of criticality, principles for assuring nuclear
safety, a review of cases of the occurrence of uncontrolled chain reactions,

Card 1/2

UDC: 621.039.519.4/621.039.58

ACC NR: AM6032824

and the basic standards for nuclear safety. The authors express appreciation to M. P. Rodionov, T. I. Sukhoverkhova, M. A. Gavrilova, and L. V. Antonkina for their valuable assistance. There are 64 references, 30 of which are Soviet.

TABLE OF CONTENTS (Abridged)

From the authors -- 3

Ch. I. Basic concepts of nuclear safety -- 5

Ch. II. Review of experimental data on critical parameters of systems with fissionable materials -- 14

Ch. III. Methods of calculating homogeneous reactors -- 88

Ch. IV. Effect of neutron absorbers on the criticality of systems with fissionable materials -- 142

Ch. V. Criticality of systems of interacting subcritical assemblies from fissionable materials -- 169

Ch. VI. Uncontrolled chain reaction outbursts in systems containing fissionable materials -- 202

Ch. VII. Basic standards for assuring nuclear safety -- 214

References -- 223

SUB CODE: 18/

SUBM DATE: 20May66/

ORIG REF: 030/

OTH REF: 034

Card 2/2

BOGATTREV, V.

Attachment for long-playing records. Radio no.8:42-43 Ag '54.
(Phonorecords) (MLRA 7:8)

S/081/62/000/021/058/069
B160/B186

AUTHORS: Smirnov, V. K., Lyamshina, Ye. N., Bogatyrev, P. M.

TITLE: New chemically stable coating systems

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1962, 480
abstract 21P300 (Lakokrasochn. materialy i ikh primeneniye, n. no. 6, 1961, 23-25)

TEXT: New chemically stable paints and varnishes have been developed on the basis of resol phenol formaldehyde resin produced in the presence of an ammonia catalyst; glycerine dichlorhydrine and n-toluene sulfo-acid are introduced into the composition of the coatings as hardening accelerators. The coatings dry more quickly and at a lower temperature than films of bakelite varnish and varnish No. 86. Recipes are given for primers and top-coat varnishes recommended for the protection of chemical apparatus exposed to various aggressive media. 7 references.

[Abstracter's note: Complete translation.]

Card 1/1

BOGATYREV, V., inzh.

Dump truck with a new lifting device. Avt.transp. 42 no.1:39-40
Ja '64. * (MIRA 17:2)

1. Mosoblavtoupavleniye.

Bogatyrev, V. A.

130-9-12/21

AUTHORS: Bogatyrev, V.A. and Isayev, I.N.

TITLE: Increasing Drawing Speed of a 7.5 ton Mill. (Uvelicheniye skorosti volocheniya stana 7.5 t)

PERIODICAL: Metallurg, 1957, Nr 9, p.26 (USSR)

ABSTRACT: This is a brief note of improvements effected in a 7.5 ton tube-drawing machine which have enabled the drawing speed to be increased to 45 m/min with tubes having wall-thicknesses of 0.85-1.0 mm. The design and quality of the die have been improved to cope with the higher speeds.

ASSOCIATION: Nikopol' South Tube Works (Nikopol'skiy Yuzhnotrubby Zavod)

AVAILABLE: Library of Congress.

Card 1/1

TARASEVICH, V.I.; BOGATYREV, V.A.

Field investigations of the frictional resistance of drilling tools.
Izv.vys.ucheb.zav.; neft' i gaz 5 no.12:21-26 '62. (MIRA 17:4)

1. Kuybyshevskiy politekhnicheskii institut imeni Kuybysheva.

BOGATYREV, V.A.; MEDER, V.A.; SHVARTSMAN, M.S.

Using net charts in the construction of chemical plants. From.
stroil. 42 no.2:6-10 '65. (MIRA 18:4)

1. Khimicheskiy kombinat "Luganskkhimstroy" (for Bogatyrev,
Meder). 2. Nauchno-issledovatel'skiy institut stroitel'nogo
proizvodstva Gosstroya UkrSSR (for Shvartsman).

BOGATYREV, V.D.

Predicting silting in small reservoirs. Vop. vod. khoz. i
gidrol. Urala no.2:3-12 '63. (MIRA 18:3)

BOGATYREV, V.D.

Calculating the dewatering conduits of a system of reservoirs.
Vop. vod. khoz. i gidrol. Urala no.2:43-46 '63. (MIRA 18:3)

Bogatyrev, V. G.

POLAND/Acoustics.

J

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10208

Author : Semenov, R.A., Bogatyrev, V.G.

Inst : Not given

Title : Ultrasonic Control of Bushings.

Orig Pub: Vestnik Mashinostroyeniya, 1956, No 9, 65-67

Abstract: No abstract.

Card : 1/1

BOGATYREV, V.I., inzh.; LOBASTOV, N.P., inzh.

Loading lumber in cars with "caps." Rech. transp. 17 no.3:35-37
Mr '58. (MIRA 11:4)

(Loading and unloading)
(Lumber--Transportation)

BATRANOV, Vladlen Aleksandrovich; BOGATYREV, Vladimir Il'ich; BAVAROV, S.F.,
red.; SHIROKOVA, M.M., tekhn.red.

[Electronic digital computers for solving information and logic
problems] Elektronnye tsifrovye mashiny dlia reshenia infor-
matsionno-logicheskikh zadach. Moskva, Gos.energ.izd-vo, 1961.
79 p. (Massovaya radiobiblioteka, no.404)

(MIRA 14:12)

(Electronic digital computers)

38993

S/089/62/013/001/009/012
B102/B104

21.1000

AUTHOR:

Bogatyrev, V. K.

TITLE:

An approximate formula for the geometrical parameters of homogeneous bodies of arbitrary shape

PERIODICAL:

Atomnaya energiya, v. 13, no. 1, 1962, 68 - 70

TEXT: To estimate the criticality of arbitrarily shaped bodies, an approximate formula is derived which is simple to use without requiring excessive computation work. The formula derived by Stuart (J. Appl. Phys. 27, no. 11, 527, 1956) needs electronic computers and that by Zagrafov (Atomnaya energiya, 8, no. 1, 23, 1960) holds only if the system is larger than some mean free neutron paths. The body considered is assumed to be homogeneous, having a multiplication factor much greater than unity. Such a body has at least one point where the neutron flux is highest. If $d\Omega$ denotes the solid angle originating at this point and $r(\Omega)$ a radius vector in it the geometrical parameter κ of the body can be stated as $\kappa = \frac{1}{4} \int_{\Omega} \frac{d\Omega}{r(\Omega)}$. For an infinite

Card 1/2

X

An approximate formula for ...

S/089/62/013/001/009/012
B102/B104

plate of thickness H

$$\kappa = \frac{1}{4} \int \frac{d\Omega}{r(\Omega)} = \frac{2\pi}{4} \int_0^{2\pi} d\varphi \int_0^{\frac{\pi}{2}} \frac{\sin \theta d\theta}{\frac{H}{2 \cos \theta}} = \frac{\pi}{H}$$

two interacting spheres (radius R, distance d)

is obtained, and for

$\kappa = \frac{\pi}{r} \left(1 - \frac{1}{2} \sqrt{1 - \frac{r^2}{d^2}} \right) + \frac{\pi r}{2d^3} \left(1 - \frac{1}{2} \ln 3 \right)$. For a cube (having length of side a) $\kappa = \frac{3\sqrt{2}}{a} \arcsin \sqrt{8/9}$, $\kappa_{\text{appr}}/\kappa_{\text{exact}} = 0.96$; for a cylinder ($R_0, 2h$)

$\frac{\pi}{2R_0} \left(\frac{\pi}{2} \arcsin \frac{R_0}{h} + \frac{hR_0}{h^2 + R_0^2} \right) + \frac{\pi R_0^3}{2(h^2 + R_0^2)}$ is obtained, where $\kappa_{\text{appr}}/\kappa_{\text{exact}} = 1.028 -$

0.973. In no case does $\kappa_{\text{appr}}/\kappa_{\text{exact}}$ exceed 4%. All dimensions are defined as including the extrapolation length. There are 2 tables.

SUBMITTED: October 21, 1961

Card 2/2

38994

S/089/62/013/001/010/012

B102/B104

2/1000

AUTHOR:

Bogatyrev, V. K.

TITLE:

Use of the albedo method for considering the interaction of subcritical assemblies

PERIODICAL:

Atomnaya energiya, v. 13, no. 1, 1962, 70 - 72

TEXT: A system composed of a sphere and a cylinder, both near the critical state, is considered, the interaction of the bodies being described by an albedo equation (A. Mayne, J. Nucl. Energy, 2, no. 2, 113, 1956). It is shown that the approximate formula $\gamma = 1 + 4D/\Delta r$ for the albedo γ , which holds if the difference Δr between true and critical radii is small, is almost as accurate as the far more complex expressions obtained in one-group diffusion approximation (Glasstone, Edlund). D denotes the diffusion coefficient. If the neutron flux striking an infinite cylinder is non-uniform with respect to the angle φ but is symmetrical with respect to the coordinate of φ , the neutron flux striking the cylinder can be given by

$J^-(\varphi) = \sum_{n=0}^{\infty} B_n \cos n\varphi$. The flux of reflected neutrons, in diffusion approx-

Card 1/2

Use of the albedo method ...

S/089/62/013/001/010/012.
B102/B104

$$\text{mation } J_n(\varphi) = \frac{\Delta r + 4D}{\Delta r} B_0 + \sum_{n=1}^{\infty} C_n(\kappa r) B_n \cos n\varphi$$

$$C_n(\kappa r) = \frac{J_n(\kappa r) - 2D \frac{dJ_n(\kappa r)}{dr}}{J_n(\kappa r) + 2D \frac{dJ_n(\kappa r)}{dr}} \quad (10)$$

is obtained ($D \ll R$, R critical, r true radius; $r = R - (r - 2D)$). The anisotropy of the neutron reflection from the cylinder can be characterized by $\cos \varphi = B_1 C_1(\kappa r) / 2B_0$. If $D \ll R$, then $C_n(\kappa r)$ can be taken as constant in most cases. The results show that γ is an important and general parameter, characterizing the interaction of sub-critical assemblies.

SUBMITTED: October 21, 1961

Card 2/2

VULIKH, A.I. (Novosibirsk); BOGATYREV, V.I. (Novosibirsk)

Ion exchange method of producing hydrobromic and hydriodic acids. Izv. Sib. otd. AN SSSR no.8:53-64 '62. (MIRA 17:8)

VULIKH, A.I.; BOGATYREV, V.L.

Static and dynamic ion exchange methods for the preparation of electrolytes. Prom.khim. reak. i osobo chist.veshch. no.2:14-17 '63.

(MIRA 17:2)

VULIKH, A.I. ~~BOGATYREV, V.L.~~

Ion-exchange preparation of acids under static-dynamic conditions.
Izv. SO AN SSSR no.7 Ser.khim.nauk no.2:40-47 '63. (MIRA 16:10)

BOGATYREV, V.L.; VULIKH, A.I.

Ion exchange preparation of acids. Izv. SO AN SSSR no.11 Ser.khim.
nauk no.3:70-72 '63. (MIRA 17:3)

BOGATYREV, V.L.; VULIKH, A.I.

Ion exchange preparation of bromic and iodic acids. Zhur.prikl.khim.
36 no.1:220-222 Ja '63 (MIRA 16:5)
.. (Bromic acid) (Iodic acid) (Ion exchange)

NIKOLAYEV, A.V.; BOGATYREV, V.L.; VULIKH, A.I.

Study of ion exchange processes by means of physicochemical analysis.
Dokl. AN SSSR 153 no.2:360-362 N '63. (MIRA 16:12)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR.
2. Chlen-korrespondent AN SSSR (for Nikolayev).

NIKOLAYEV, A.V.; BOGATYREV, V.L.; VULIKH, A.I.

Ion-exchange system R^+ , NH_4^+ || R^- , $Cl^- - H_2O$. Zhur. neorg. khim.
9 no.10:2469-2474 0 '64.

(MIRA 17:12)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR.

NIKOLAYEV, A.V.; BOGATYREV, V.L.; VULIKH, A.I.

Ion exchange system H^+ , Ca^{2+} , Mg^{2+} , R^+ , Cl^- H_2O investigated by the
ray method. Dokl. AN SSSR 155 no. 3:607-610 Mr '64.
(MIRA 17:5)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN
SSSR. 2. Chlen-korrespondent AN SSSR (for Nikolayev).

BOGATYREV, V.I.

Calculation of equilibrium in systems with ion exchangers during the formation of difficultly soluble precipitates. Izv. AN SSSR. Ser. khim. no.9:1689-1691 '65. (MIRA 18:9)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR.

VULEKH, A.T.; BOGATYREV, V.L.

Specific gravity of ion exchangers as dependent on their ionic
composition. Zhur. prikl. khim. 38 no.1:99-102 Ja 1965.

(MIRA 18:3)

VULIKH, A.I.; NIKOLAYEV, A.V.; ZAGORSKAYA, M.K.; BOGATYREV, V.L.

Absorption of ammonia and chlorine by ion-exchange resins under
dynamic conditions. Dokl. AN SSSR 160 no.5:1072-1074 F '65.

(MIRA 18:2)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR.
2. Chlen-korrespondent AN SSSR (for Nikolayev).

L 10847-66 EMT(A)/ETC/ENG(A) DS/PM

ACC NR: AP6000232

SOURCE CODE: UR/0289/65/000/002/0019/0022

AUTHOR: Nikolayev, A. V.; Bogatyrev, V. L.

ORG: Institute of Inorganic Chemistry, Siberian Branch, AN SSSR, Novosibirsk
(Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR)

TITLE: Calculation of optimum conditions of separation of cation and anion ex-
changers

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no.
2, 1965, 19-22

TOPIC TAGS: anionite, ion exchange resin

ABSTRACT: The desirability of using mixtures of nonpolar organic liquids for the separation of cation exchangers from anion exchangers is demonstrated. Equations based on Stokes Law are derived which make it possible to find the optimum density of the solution used for the separation and the duration of the latter. Although the formulas derived apply to spherical exchangers (KU-2, KB-4, AV-17, etc.), they can also be applied to the calculation of the conditions of separation of exchangers having an irregular shape (KU-1, EDE-10F, AN-2F, etc.) by introducing a suitable coefficient which allows for the shape of the particles (a correction for the deviation of the radius of an irregular-shaped particle from the radius of a sphere).

Orig. art. has: 2 figures and 8 formulas.

SUB CODE: 07, 11 / SUBM DATE: 15Jun64 / ORIG REF: 002 / OTH REF: 001

Cord 1/1 H(U)

UDC: 541.133

ACC NR: AP6000233

SOURCE CODE: UR/0289/65/000/002/0023/0027

AUTHOR: Nikolayev, A. V.; Bogatyrev, V. I.; Vulikh, A. I.

ORG: Institute of Inorganic Chemistry, Siberian Section, AN SSSR, Novosibirsk
(Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR)

TITLE: Separation of cation and anion exchangers in organic liquids

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk,
no. 2, 1965, 23-27

TOPIC TAGS: anionite, ion exchange resin

ABSTRACT: The cation exchanger KU-2 was separated from the anion exchanger AV-17 in mixtures of benzene, dichloroethane, and carbon tetrachloride. Values of the density and viscosity at 20C in these systems were determined. The dependence of the time of separation was studied as a function of the density of the separating liquid and grain size of the exchangers, and the effect of the difference in the density of the cation and anion exchanger during their separation was demonstrated. Formulas derived earlier for the calculation of the optimum density of the separating liquid and duration of separation of cation and anion exchangers were confirmed experimentally. Orig. art. has: 3 figures and 5 tables.

SUB CODE: 07, 11 / SUBM DATE: 15Jun64

Card 1/1

UDC: 541.13

NIKOLAYEV, A.V.; BOGATYREV, V.L.

Calculation of the optimum conditions for the separation of
cation and anion exchangers. Izv. SO AN SSSR no.7 Ser. khim.
nauk no.2:19-22 '65. (MIRA 18:12)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN
SSSR, Novosibirsk. 2. Chlen-korrespondent Sibirskogo
otdeleniya AN SSSR (for Nikolayev). Submitted June 15, 1964.

L 13005-66 EMP(a)/EST(m)/T/EMP(t)/EMP(b) IJP(c) JD/WW/JWD

ACC NR: AP6005425

SOURCE CODE: UR/0289/65/000/005/0150/0152

AUTHOR: Nikolayev, A. V.; Bogatyrev, V. L. 41

ORG: Institute of Inorganic Chemistry, Siberian Department, Academy of Sciences SSSR, Novosibirsk (Institut neorganicheskoy khimii Sibirskogo otdeleniya Akademii nauk SSSR) 8

TITLE: Extraction of boron²⁷ from datolite

SOURCE: AN SSSR. Sibirskoye otdeleniya. Izvestiya. Seriya khimicheskikh nauk, no. 3, 1965, 150-152

TOPIC TAGS: boron, boron mineral, chemical separation, boron compound

ABSTRACT: A study has been made of the effects of the nature and concentration of the acid on the boron extraction from acid solutions of datolite mineral using methanol as extracting agent. Procedures of the acid digestion of datolite containing 18.2% B_2O_3 , distillation of the methyl borate, and analysis of the condensate were described. Tabulated data indicated that the maximum percent of boron extraction (about 95%) was achieved from 52% H_2SO_4 and 7% HCl solutions. These acid concentrations were considered optimum for B extraction. By saponification of methyl borate with alkali or soda ash, 98-99% of the

UDC: 546.27 : 543.06

542.945.5

Card 1/2

~~L 13885-66~~
ACC NR: AP6005425

methanol can be regenerated and reused for extraction. A chemically
pure borax was obtained with soda ash. Orig. art. has: 3 tables. [JK]

SUB CODE: 07/ SUBM DATE: 06Jun64/ ORIG REF: 004/ OTH REF: 005/
ATD PRESS: 4192

LB

Card 2/2

BOGATYREV, V. L.; SOKOLOVA, S.I.

Dissolution of $\text{UO}_2\text{C}_2\text{O}_4$ by means of ion-exchange resins.
Radiokhimiia 7 no.6:725-727 '65. (MIRA 19:1)

L 27359-66 EWT(m)/ETC(f)/FWS(m) RM/DS/JD
 ACC NR: AP6008806 SOURCE CODE: UR/0136/65/000/011/0096/0099

AUTHORS: Bogatyrev, V. L.; Vulikh, A. I.; Sokolova, S. I. 43
 B

ORG: none

TITLE: Derivation of ammonium perrhenate from potassium perrhenate with the aid of mixed bed ion exchangers 27

SOURCE: Tavetnyye metally, no. 11, 1965, 96-99

TOPIC TAGS: ammonium salt, rhenium compound, ion exchange resin, cation exchanger, anion exchanger, ion exchange/ KU-2 cation exchanger, AV-17 anion exchanger

ABSTRACT: This investigation was conducted to extend the work of N. M. Rubinshteyn (Avt. svid. No. 148390 (Byull. izobret., No. 13, 1962)). Ammonium perrhenate was synthesized from potassium perrhenate and ammonium carbonate with the aid of a mixed bed KU-2 cation exchanger and AV-17 anion exchanger. The reaction was carried out according to the scheme

$$RH + R'OH + KReO_4 = RK + R'ReO_4 + H_2O;$$

$$2RH + R'_2CO_3 + 2KReO_4 = 2RK + 2R'ReO_4 + H_2CO_3 (H_2O + CO_2 \uparrow);$$

$$RNH_4 + R'OH + KReO_4 = RK + R'ReO_4 + NH_4OH (H_2O + NH_3 \uparrow);$$

$$2RNH_4 + R'_2CO_3 + 2KReO_4 = 2RK + 2R'ReO_4 + (NH_4)_2CO_3 (H_2O + CO_2 \uparrow + NH_3 \uparrow).$$

The optimum conditions for maximum yield of ammonium perrhenate were established. The

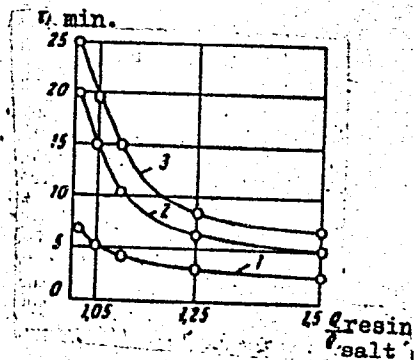
Card 1/2 UDC: 669.849:66.074.7

L 27359-66

ACC NR: AP6008806

experimental results are presented in graphs and tables (see Fig. 1),

Fig. 1. Dependence of the duration of the process on the nature of the compounds formed and the ratio of resin to salt (in mg--eq.);
 $t = 20^\circ\text{C}$, potassium perrhenate charge = 3 g,
 volume of solution $v = 50$ ml; 1 - H_2O ; 2 -
 H_2CO_3 ; 3 - NH_4OH .



and a flow diagram for the reaction is also presented. It was found that 250 g of ammonium carbonate were required per 1000 g yield of ammonium perrhenate. For a mixture of 0.4 kg KU-2 and 0.6 kg AV-17 ion exchangers and at a cycling time of 1.5--2 hours, the yield of ammonium perrhenate was 0.5 kg. The potassium ion content in the product was less than 0.001%. Orig. art. has: 2 tables, 3 graphs, and 1 equation.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 002

Cord 2/2

L 34610-66 EWT(1) RO

ACC NR: AP6026571

SOURCE CODE: UR/0240/66/000/003/0100/0102

AUTHOR: Vulikh, A. I. (Candidate of technical sciences); Shivandronov, Yu. A. (Candidate of technical sciences); Zagorskaya, M. K. (Candidate of technical sciences); Bogatyrev, V. L. (Candidate of chemical sciences) 11/3

ORG: Novosibirskiy Factory of Chemical Agents (Novosibirskiy zavod khimicheskikh reaktivov); Institute of Inorganic Chemistry, Siberian Branch, AN SSSR (Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR)

TITLE: Filtering ionite gas mask ⁶

SOURCE: Gigiyena i sanitariya, no. 3, 1966, 100-102

TOPIC TAGS: gas mask, gas absorption, ion exchange resin, gas mask component, gas filter, industrial hygiene

ABSTRACT: The authors tested in a wide range of concentrations and gas velocities the absorption from gas-air mixtures of ammonia, amines (by KU-2 cationite in hydrogen form), sulfur dioxide, chlorine, and hydrogen chloride (by AV-17 and EDE-10P anionites in the hydroxyl and carbonate forms). The basic and acidic gases were invariably completely absorbed. The capacity of the ionites was 80-90% of the total exchange capacity, i.e., 4 meq/g for KU-2 and about 3 meq/g for AB-17. The most universal absorbents are the highly ionized single-function resins (KU-2, OBS-3, SEV, and AV. The carboxyl cationites (e.g., KB-4) and anionites with secondary and tertiary

UDC: 614.894

Card 1/2

L 34610-66

ACC NR: AP6026571

amino groups (e.g., EDE-10P), whose capacity is 8-9 geq/kg, seem to be more effective in absorbing strongly acidic and strongly basic gases. Ionites with large pores (KU-2P for amines, etc.) are best for absorbing gases or fumes of organic substances with large molecules.

The article concludes with a brief description of an ionite gas mask successfully used for several months under industrial conditions to provide protection against ammonia. An antidust filter from a RP-5 respirator is mounted on the lower part of the tank. KU-2 in the H form was the absorbent used. The total weight of the tank with the antidust filter was 200-250 g. Loaded with 50 g of KU-2, it absorbed 3.5 g of ammonia and worked continuously for 30 hours. Orig. art. has: 1 figure and 1 table. [JPRS: 36,455]

SUB CODE: 06, 15, 07 / SUBM DATE: 24Nov64 / ORIG REF: 003 / OTH REF: 001

Card 2/2 *90*

L 10392-67 BWT(m) DS/RM
 ACC NR: AP7003122 SOURCE CODE: UR/0080/68/039/008/1760/1765 16
 AUTHOR: Bogatyrev, V. L.; Vulikh, A. I.; Sokolova, S. I.
 ORG: Institute of Inorganic Chemistry, SO, AN SSSR (Institut neorganicheskoy khimii SO AN SSSR)
 TITLE: Density of ion-exchange resins
 SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 8, 1966, 1760-1765
 TOPIC TAGS: ion exchange resin, polymer cross linking
 ABSTRACT: A systematic determination was made of the densities of the most widespread industrial cation- and anion-exchange resins in various salt forms (in the dry and swollen states), for use in the development of technological and analytical methods based on the use of ion-exchange resins. The dependence of the density of the investigated ion-exchange resins upon the nature of the sorbed ion, grain size, and degree of cross linking was demonstrated. Fluctuation of the temperature within the range 10-30° was found to have no significant effect upon the results of the determinations. General patterns of variation were observed: 1) the density of the swollen ion-exchange resin was always less than the density of the dry resin, since the density of the latter was greater than one in all cases; 2) the density of the cation-exchange resins was generally greater in absolute magnitude than the density of the anion-exchange resins, which corresponds to the ratio of the densities of their matrices; 3) the density of the same ion-exchange resin increased with increasing equivalent weight of the sorbed ion; 4) the density of various ion-exchange resins containing the same
 Card 1/2 UDC: 661.183.12
 0925 2080

L 10392-67

ACC NR: AP7003122

ion was generally greater the capacity of the ion-exchange resin. The dependence of the density of the cationite KU-2 upon the atomic weight in the series of alkali metals was linear, with the density increasing from lithium to cesium. The influence of degree of cross-linking was investigated on the cation-exchange resin KU-2, containing 4, 12, and 24% divinylbenzene. No dependence of the density on the cross-linking was found for the dry cation-exchange resin, but a pronounced increase with increasing divinylbenzene content was observed on the swollen ion-exchange resin. Formulas are cited for the calculation of the optimum density of the partitioning liquid and time of separation of ions according to the known densities of the ion-exchange resins. Orig. art. has: 2 figures and 4 tables. [JPRS: 38,970]

SUB CODE: 07 / SUBM DATE: 14Jul64 / ORIG REF: 005 / OTH REF: 002

Card 2/2 ^{6pp}

BOGATYREV, V.M.

Electric heating of vulcanizing equipment. Obm.tekh.pyt.na avt.
transp. no.4:41-43 '60. (MIRA 13:12)
(Vulcanization)

BOGATYREV, Vladimir Nikolayevich; BONDARENKO, A.K., inzh., retsenzents;
PROSKURYAKOV, A.V., kand. tekhn., red.; ANTIPOV, V.P., red. izd-va;
DOBRITSYNA, R., tekhn. red.

[Selecting an efficient procedure for machining parts at machinery plants] Vybor ekonomichnogo protsessa mekhanicheskoi obrabotki detalei na mashinostroitel'nykh zavodakh. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit.lit-ry, 1961. 71 p. (MIRA 14:11)
(Machinery industry—Management)

BOGATYREV, V.N., inzh.; QERZHOY, I.P., inzh.

Adjustment of the operation of the gas burners of the TP-80 boiler.
Teploenergetika 10 no.6:35-40 Je '63. (MIRA 16:7)

1. Moskovskoye rayonnoye upravleniye energeticheskogo khozyaystva.
(Boilers)

BOGATYREV, V.P.

Mobile installation for the forming of the 500 X 6 mercury-arc
rectifier. Elek.i tepl.tiaga 4 no.1:29 Ja '60.

(MIRA 13:4)

- Iula district Power Supply*
1. Starshiy inzhener Tul'skogo uchastka energosnabzheniya.
(Electric current rectifiers)

Bogatyrev, V.P.
AUTHORS: Bogatyrev, V.P. and Govorin, I.K. (Angarsk) 3-11-16/17
TITLE: The Town of Young Specialists (Gorod molodykh spetsialistov)
PERIODICAL: Vestnik Vysshey Shkoly, 1957, # 11, pp 87 - 96 (USSR)
ABSTRACT: The authors describe a new town built between the Angara and Kitoy rivers, (Siberia) in 1932, called Angarsk. This town has become an important industrial center. The resources of this area are timber, coal, ores, gold, mica and hydro-electric power, whose exploitation is steadily growing. During the first 5 years more than 3,000 young engineers and technicians arrived for construction work. Between 1954 and 1957, higher educational institutions sent 206 engineers and 135 young specialists-chemists, oil experts, power engineering specialists, machine builders, mechanics, economists - to work in industrial enterprises and to continue the development of Angarsk.
There is one photograph.
AVAILABLE: Library of Congress
Card 1/1

BOGATYREV, V.P., gornyy inzh.; LITVIN, I.F., gornyy inzh.

We shall celebrate the anniversary of the Miner's Day with new production achievements. Ugol' 37 no.8:21-22 Ag '62.
(MIRA 15:9)

1. Bachatskiy ugol'nyy kar'yer.
(Moscow Basin--Coal mines and mining--Labor productivity)

BOGOSLOVSKIY, P.A.; BOGATYREV, V.V., red.; LARIONOV, G.Ye., tekhn.
red.

[Ice formation in the pipelines of hydroelectric power stations] Ledovyi reshim truboprovodov gidroelektricheskikh stantsii. Moskva, Gosenergoizdat, 1950. 154 p.

(MIRA 16:7)

(Hydroelectric power stations)

~~BOGATYREV, Viktor Vladimirovich; KORNILOV, A.M., red.; MATVEYEV, G.I.,
tekhn.red.~~

[Flood control for reservoir areas of large hydroelectric
power stations] Inzhenernaia zashchita v zonakh vodokhranilishch
krupnykh gidroelektrostantsii. Moskva, Gos. energ. izd-vo, 1958.
179 p. (MIRA 12:1)

(Hydraulic engineering) (Reservoirs)

BOGATYREV, V.V.

Automatically controlled gas furnace for nonoxidizing heating
for forging. Kuz.-shtam. proizv. 3 no. 2:34-37 F '61.

(MIRA 14:1)

(Furnaces, Heating)

(Automatic control)

BOGATYREV, V.V., kshh.

Automatized furnace for the annealing of modified iron castings.
Metalloved. i term. obr. met. no.2:48-52 F '61. (MIRA 14:3)

1. Giprovtoprom.
(Cast iron) (Annealing of metals)

BOGATYREV, V.V.

Some problems in the geochemistry of the Yakh-Su Depression. Izv.
Otd. geol.-khim. i tekhn. nauk AN Tadzh. SSR no.2:35-47 '61.
(MIRA 15:1)

1. Upravleniye geologii i okhrany neдр pri Sovete Ministrov
Tadzhikskoy SSR.

(Yakh-Su Valley--Geochemistry)

AVAKYAN, Artur Borisovich; SHARAPOV, Vladimir Alekseyevich; BOGATYREV,
V.V., red.; BORUNOV, N.I., tekhn. red.

[Reservoirs of the hydroelectric power stations of the U.S.S.R.]
Vodokhranilishcha gidroelektrostantsii SSSR. Moskva, Gos.energ.
izd-vo, 1962. 151 p. (MIRA 15:9)
(Hydroelectric power stations--Water supply)
(Reservoirs)

BOGATYREV, YE. F.; GUR'YEV, A. M.

"Fusing Hard Alloy Blades to Cutter Shanks by High-Frequency Currents," Stanki
I Instrument, 16, No. 6, 1945

BR-52059019

BOGATYREV, Ye.F.

Piston rings from ring pots. Lit.proizv. no.11:42 N '62.
(MIRA 15:12)

(Piston rings)

SOV/81-59-10-35287

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 10, p 274 (USSR)

AUTHORS: Balezin, S.A., Bogatyrev, Ye.V., Kaverziyeva, V.P.

TITLE: Protection of Metal Items Against Atmospheric Corrosion¹⁸

PERIODICAL: V sb.: Metody issled. ingibitorov korrozii metallov (Vses. sov. nauchno-
-tekhn. o-v, Nr 7). Moscow, 1958, pp 93-103

ABSTRACT: For protecting metal items (steel, ¹nickel-, ¹tin- and ¹chrome-plated) against corrosion it is proposed to use paper impregnated with a 30% aqueous solution of sodium benzoate (12 g/m² of paper). The technology of preparing such a paper is described. The results of the tests of the protective properties of this paper are cited. ✓

M.M.

Card 1/1

BOGATIREVA, Ye.V.; KAREPINA, M.A.

Inhibiting effect of salts of thiodivaleric and sulfonyldivaleric
acids in neutral aqueous media. Zhur.prikl.khim. 36 no.1:147-152
Ja '63. (MIRA 16:5)
(Valeric acid) (Corrosion and anticorrosives)

YAGOLA, G.K.; LIZOGUB, M.S.; ZINGERMAN, V.I.; BOGATYREV, Ye.Ye.

A nuclear meter for measuring strong magnetic fields. Izv. tekhn.
no.6:9-12 N-D '55. (MLRA 9:3)

(Magnetic fields--Measurement) (Nuclear magnetic moments)
(Electronic measurements)

YAGOLA, G.K.; ZINGERMAN, V.I.; SEPETYY, V.N.; Prinimali uchastiye:
VETVINSKIY, A.A.; BOGATYREV, Ye.Ye.

Determining the value of the gyromagnetic ratio of protons.
Izv.tekh. no.5:24-29 My '62. (MIRA 15:6)
(Protons) (Magnetic measurements)

BOGATYREV, Ye.Ye.

Highly sensitive nuclear device for measuring magnetic field intensity.
Trudy inst. Kom. stand. mer i izm. prib. no.67:76-88 '62. (MIRA 17:11)

1. Khar'kovskiy gosudarstvennyy institut mer i izmeritel'nykh priborov.

82980

9.3260

S/142/60/003/002/020/022
E192/E382

AUTHOR: Bogatyrev, Yu.K.

TITLE: On the Problem of Generation of Millimicrosecond Pulses

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Radiotekhnika, 1960, Vol. 3, No. 2, pp 291 - 292

TEXT: The regenerative pulse generator¹² with a delay line (Refs 1, 2) was investigated experimentally and it was found that by means of the standard electron tubes it was possible to generate pulses having a duration down to 70 mps. It was thought, however, that the pulse duration could be reduced by employing an inductance compensating element. The resulting circuit is shown in Fig. 1, where the compensating inductance $L_K = 0.97 \mu H$. By means of this circuit it was possible to reduce the pulse duration by 40%. Further, the repetition frequency of the pulses could be increased to 20 Mc/s instead of 12 Mc/s. ✓

There are 2 figures, 1 table and 2 Soviet references.

Card 1/2

82980

S/142/60/003/002/020/022

E192/E382

On the Problem of Generation of Millimicrosecond Pulses

ASSOCIATION: NIRFI pri Gor'kovskom gosudarstvennom
universitete im. N.I. Lobachevskogo
(NIRFI of Gor'kiy State University im.
N.I. Lobachevskiy)

SUBMITTED: July 25, 1959

Card 2/2

S/141/61/004/004/012/024
E140/L435

9,1400

AUTHOR: Bogatyrav, Yu.K.

TITLE: Stationary waves in nonlinear discrete transmission lines

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, v.4, no.4, 1961, 580-688

TEXT: The paper examines the question of wave propagation along a nonlinear lumped-parameter transmission line, taking into account the effects of dispersion on the structure of the stationary shock wave. The line is taken as an infinite line composed of identical sections (Fig.1) where the nonlinear elements are ferrite inductances without mutual coupling. The analysis is based on the nonlinear differential-difference equation of the system, its approximate solution by series expansion being limited to the first term, and analysis in the parameter plane. Zones in which the trajectories show saddle points, stable nodes and stable foci are found. The phase plane is utilized to analyse the stationary wave front structure for the low loss case. The basic conclusion is that the wave front becomes steeper and the transient oscillations increase in frequency as the bandwidth of

✓
B

S/141/61/004/004/012/024

E140/E435

Stationary waves in nonlinear ...

the line with saturated ferrite increases. The results are also applicable to lines where the nonlinear elements can be capacitances (ferroelectric, semiconductor junction capacitances, etc) or combinations of nonlinear capacitance and inductance. Acknowledgments are expressed to A.V. Gaponov for his interest in the work. There are 5 figures and 6 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Institute of Radiophysics, Gor'kiy University)

SUBMITTED: January 6, 1961

S/141/62/005/001/011/024
E140/E435

24,2200

AUTHORS: Belyantsev, A.M., Bogatyrev, Yu.K.

TITLE: Formation of electromagnetic shock waves with two discontinuities

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy.
Radiofizika, v.5, no.1, 1962, 116-121

TEXT: The author studies the question of the formation of video impulses in nonlinear LC lines and finds that in the case of ferrite cores with hysteresis, discontinuities may be formed on both leading and trailing edges. The formulae given permit the behaviour of such a line to be predicted from the magnetization curve, or the curve to be calculated from the shape of the video impulses. An experimental verification was performed at relatively low frequencies. There are 4 figures. ✓B

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete
(Radiophysics Scientific Research Institute at Gor'kiy University)

SUBMITTED: June 14, 1961
Card 1/1

9.3280

40551

S/142/62/005/003/007/009
E192/E382

AUTHOR: Bogatyrev, Yu.K.

TITLE: Nanosecond pulse-generator with nonlinear delayed feedback

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Radiotekhnika, v. 5, no. 3, 1962, 399 - 402

TEXT: The characteristics of pulses generated by a regenerative system with delayed feedback (C.C. Cutler. The regenerative pulse generator, PIRE, 1955, 43, no. 2, 150) can be improved by providing a nonlinear delay line for the feedback circuit. A generator of this type is illustrated in Fig. 1. It is based on secondary-emission tubes (type 6B1P (6D1P)). In order to increase the bandwidth of the feedback loop the input and output networks of the generator are in the form of artificial lines. The feedback system takes the form of : dynode line - delay line - grid line. The delay line is in the form of a nonlinear L(i)C line with m-derived elements and a section of a coaxial line which provides an additional delay. The coaxial cable

X

Card 1/3

Nanosecond pulse-generator

S/142/62/005/003/007/009
E192/E382

section is necessary for controlling the pulse repetition frequency. since the nonlinear portion of the delay line has a comparatively small number of elements ($n = 20$) and a delay of a few nsec per section. The nonlinear elements of the delay line are provided by toroidal coils furnished with ferrite cores. The input and output of the line are matched with the grid line and the coaxial cable at a fixed current. The output pulses from the generator are obtained across a $75\text{-}\Omega$ resistance, which is connected to the deflection plates of an oscilloscope. By introducing the nonlinear delay line the duration of the generated pulses and their rise time were reduced. Similar results were obtained if p-n - semiconductor capacitors were used as nonlinear elements in the delay line. In this case, the rise time of the order of 4 nsec and an amplitude of 30 V were achieved. There are 2 figures. ✓

ASSOCIATION: NIRFI pri Gor'kovskom gos. universitete im.
N.I. Lobachevskogo (NIRFI of Gor'kiy
State University im. N.I. Lobachevskiy)

SUBMITTED: October 30, 1961
Card 2/3

BOGATYREV, Yu.K.

Electromagnetic shock waves in a nonlinear line with lumped
parameters. Izv.vys.ucheb.zav.; radiofiz. 5 no.6:1131-1143
'62. (MIRA 16:2)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri
Gor'kovskom universitete.
(Electromagnetic lines) (Radio lines)

L 17294-63 BDS

ACCESSION NR: AP3004841

S/0141/63/006/003/0551/0560

AUTHOR: Belyantsev, A. M.; Bogatyrev, Yu. K.; Solov'yeva, L. I. 45

TITLE: Formation of shock electromagnetic waves in transmission lines containing unsaturated ferrite

SOURCE: IVUZ. Radiofizika, v. 6, no. 3, 1963, 551-560

TOPIC TAGS: electromagnetic wave, shock wave, transmission line, ferrite

ABSTRACT: Results are submitted of an experimental investigation of the formation and growth of electromagnetic shock waves. It is proved that with a slow (static) variation in intensity magnetization of ferrite, the shock-wave formation is largely due to an evolution of a quasi-simple wave. With rapid (dynamic) variation in the ferrite magnetization, the dissipation of energy associated with the flux reversals in ferrite plays an important part. The effect of ferrite parameters upon the rate of formation and growth of the shock wave is investigated.

Card 1/2

L 17294-63

ACCESSION NR: AP3004841

0
Four designs of transmission lines, as well as standard ferrites and F-100, F-400, F-600, and K-65 experimental ferrites, were investigated. It was found that shock-wave formation occurs more rapidly with higher saturation flux densities and with lower remanence. The optimum number of line sections necessary for the shock-wave formation was found theoretically and experimentally. Orig. art. has: 10 figures, 2 formulas, and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific-Research Radiophysics Institute, Gor'kiy University)

SUBMITTED: 17Jul62

DATE ACQ: 27Aug63

ENCL: 00

SUB CODE: GE, PH

NO REF SOV: 009

OTHER: 000

Card 2/2

L-17293-63 BDS

ACCESSION NR: AP3004842

S/0141/63/006/003/0561/0571

AUTHOR: Belyantsev, A. M.; Bogatyrev, Yu. K.; Solov'yeva, L. I. 45

TITLE: Steady-state shock electromagnetic waves in transmission lines containing unsaturated ferrite

SOURCE: IVUZ. Radiofizika, v. 6, no. 3, 1963, 561-571

TOPIC TAGS: electromagnetic wave, shock wave, transmission line, ferrite, unsaturated ferrite

ABSTRACT: As field structure in the region of a rapidly-traveling transient jump is basically similar to that of a steady-state shock wave, the effect of the field-jump magnitude and initial conditions upon the rate of propagation of the shock wave and its impedance was experimentally investigated; also studied was the effect of line and ferrite parameters upon the shock-wave structure. Toroidal-coil-line delay time and shock-wave impedance were determined

Card 1/2

L 17293-63

ACCESSION NR: AP3004842

theoretically and experimentally. Leading-edge duration of about 1 nanosec. and currents of about 100 amp. amplitude were used. Special experimental ferrites F-100, F-400, F-600, and K-65 were used; F-600 ferrite apparently proved best for obtaining steep wave fronts. "The authors are very thankful to A. V. Gaponov, L. A. Ostrovskiy, and G. I. Freydmann for their advice and going over the manuscript." Orig. art. has: 11 figures and 7 formulas.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific-Research Radiophysics Institute, Gor'kiy University)

SUBMITTED: 17Jul62

DATE ACQ: 27Aug63

ENCL: 00

SUB CODE: GE, PH

NO REF SOV: 010

OTHER: 001

Card 2/2

ACCESSION NR: AP4007188

S/0141/63/006/005/0985/0991

AUTHOR: Bogatyrev, Yu. K.; Ostrovskiy, L. A.

TITLE: Propagation of electromagnetic waves in nonlinear transmission lines with lumped parameters II. Structure of the shock wave front

SOURCE: IVUZ. Radiofizika, v. 6, no. 5, 1963, 985-991

TOPIC TAGS: electromagnetic wave propagation, wave propagation, non-linear transmission line, shock wave structure, quasistationary shock wave, stationary wave

ABSTRACT: This the second of two articles and is devoted to a discussion of the numerical results of the first part (Izv. vuzov, Radiofizika, v. 6, 973, 1963) dealing with the structure of the stationary-wave front (duration of initial section, period and amplitude of the oscillations behind the front). For nonquasistatic reversal of ferrite magnetization the rise time agrees for the most part with the linear approximation. The period of the oscillations behind the shock wave remains approximately constant at a value close to the pi-mode critical frequency, and the amplitude in-

Card 1/2

ACCESSION NR: AP4007188

creases rapidly. In the quasistatic case the rise time agrees well with the dispersion-equation data, and the oscillation amplitude and frequency have approximately the same behavior as for the nonquasistatic case. The results in general agree well with the theoretical calculations (Izv. Vuzov, Radiofizika, v. 6, 661 and 561, 1963). The computational difficulties involved in the case of lines with a large number of elements are briefly discussed. In conclusion, the authors are deeply grateful to A. V. Gaponov, A. M. Belyantsev, and G.I. Freydmann for valuable remarks, and also V. P. Aleshin, T. N. Alkeksandrovskaya and S. F. Morozov for programming the problems. Orig. art. has: 4 figures and 5 formulas.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute at Gor'kiy University)

SUBMITTED: 29Jan63

DATE ACQ: 20Jan64

*ENCL: 00

SUB CODE: CO, GE

NO REF SOV: 005

OTHER: 000

Cord 2/2

ACCESSION NR: AP4007187

S/0141/63/006/005/0973/0984

AUTHOR: Bogaty*rev, Yu. K.; Ostrovskiy, L. A.

TITLE: Propagation of electromagnetic waves in nonlinear transmission lines with lumped parameters. I. Nonstationary processes

SOURCE: IVUZ. Radiofizika, v. 6, no. 5, 1963, 973-984

TOPIC TAGS: electromagnetic wave propagation, transmission line element, wave propagation nonlinear transmission line, unsaturated ferrite element, electromagnetic shock wave, shock wave, shockwave formation, unsaturated ferrite line

ABSTRACT: A numerical solution is obtained for the equation of propagation of a pulse in a transmission line with lumped parameters, comprising a concatenation of identical two-ports with ferrite-core coils as the nonlinear elements. This article is the first of two parts and deals with the transient behavior and in particular with the shock-wave formation. Both quasi-static and incoherent reversal of the ferrite magnetization are considered. The solutions

Card 1/2

ACCESSION NR: AP4007187

are obtained with an electronic computer by the Runge-Kutta and by the Euler method. It follows from the calculations that in both cases the structure of the shock wave front and the values of the quantities on both sides of the front vary little over a sufficiently long time (compared with the shock wave duration). The results are compared with an approximate theoretical solution. Although the theory shows that in the incoherent variant the line remains essentially nonlinear behind the shock wave and reflections must be taken into account, the calculations do not bear this out. Orig. art. has: 9 figures, 14 formulas, and 2 tables.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute of the Gor'kiy University)

SUBMITTED: 29Jan63

DATE ACQ: 20Jan64

ENCL: 00

SUB CODE: CO, GE

NO REF SOV: 015

OTHER: 001

Card 2/2

BELYANTSEV, A.M.; BOGATYREV, Yu.K.; SOLOV'YEVA, L.I.

Formation of electromagnetic shock waves in transmission lines with unsaturated ferrite. Izv. vys. ucheb.zav.; radiofiz. 6 no.3:551-560 '63. (MIRA 16:9)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.

(Electromagnetic waves) (Ferrite)

BELYANTSEV, A.M.; BOGATYREV, Yu.K.; SOLOV'YEVA, L.I.

Stationary electromagnetic shock waves in transmission lines with unsaturated ferrite. Izv. vys. ucheb.zav.; radiofiz. 6 no.3:561-571 '63. (MIRA 16:9)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.

(Electromagnetic waves)
(Ferrite)

BOGATYREV, Yu.K.

Calculation of a nonlinear pulse shaping line with lumped
parameters. Izv.vys.ucheb.zav.; radiotekh. 8 no.5:545-549
S-O '65. (MIRA 18:12)

1. Submitted June 20, 1964.

L 11805-66 ENI(1) 66

ACC NR: AP6002301

SOURCE CODE: UR/0141/65/008/006/1171/1177

AUTHOR: Bogatyrev, Yu. K.

ORG: Scientific Research Institute of Radio Physics at Gorky University
(Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gorkovskoy universitete)

TITLE: Formation and development of electromagnetic shock waves in transmission lines with ferroelectrics

SOURCE: IVUZ. Radiofizika, v. 8, no. 6, 1965, 1171-1177

TOPIC TAGS: transmission line, ferroelectric transmission line

ABSTRACT: A theoretical and experimental investigation is reported of the formation, development, and front structure of stationary shock waves that propagate in a non-saturated-ferroelectric distributed-parameter transmission line. The process of steep-front wave formation involves ferroelectric polarity reversal and is described by dynamic equations which allow for relaxation phenomena in the ferroelectric. With several simplifying assumptions, these equations are solved yielding a formula for the shock-wave shape. The ferroelectric is responsible for a longer pre-front segment of the shock wave than that in the case of ferrite lines. Cascades of LC-circuits with ferroelectric capacitors were used in experiments (up to 20 LC-circuits, up to 1.7 kv). The dissipation of energy associated with the ferroelectric polarity reversal is largely responsible for the formation of the wave front. The ferroelectric transmission lines are believed to be promising for

Card 1/2

UDC: 621.371.621.391.814.2

L 11805-66

ACC NR: AP6002301

6
applications requiring high (a few kv) voltage drops with a front of 10^8 — 10^9 sec.
"In conclusion, the author wishes to thank A. V. Gabonov and L. A. Ostrovskiy for
their interest in the work and discussing its results." Orig. art. has: 5 figures
and 25 formulas. [03]

SUB CODE: 09/ SUBM DATE: 07Apr65/ ORIG REF: 006/ OTH REF: 004/ ATD PRESS: 4180

HW
Card 2/2

L 52192-65 EWT(1)/EWA(h) Feb

ACCESSION NR: AP5011949

UP/0142/65/008/001/0041/0047
621.3.09

AUTHOR: Belyantsev, A. M.; Bogatyrev, Yu. K.

TITLE: Calculation of nonlinear ferrite shaping lines

SOURCE: IVUZ. Radiotekhnika, v. 8, no. 1, 1965, 41-47

TOPIC TAGS: pulse shaper, pulse shaping line

ABSTRACT: A procedure is given for calculating (step- or pulse-)shaping lines of these two types: (a) a ferrite-filled coaxial line and (b) an LC-distributed-parameter line representable by a ladder of l-f k-sections; nonlinear elements have the form of ferrite-core toroidal coils. The calculations cover the case of rapid change of the voltage and current in the pulse front, when the rate of change of the magnetic field in ferrite exceeds 10^8 -- 10^9 oer/sec, and the field strength is much higher than the coercive field value. Instructions for selecting the ferrite initial, saturation, and remanent magnetizations and the dissipation factor are also given. Orig. art. has: 3 figures and 20 formulas.

Card 1/2

L 52192-55

ACCESSION NR: AP5011949

ASSOCIATION: none

SUBMITTED: 17Sep62

ENCL: 00

SUB CODE: EX

NO REF SOV: 011

OTHER: 001

llc
Card

2/2

L 43921-66 EWT(1)/EEC(k)-2/T/EWP(k) IJP(c) WG

ACC NR: AP6026935

SOURCE CODE: UR/0141/66/009/004/0715/0719

AUTHOR: Bespalov, V. I.; Bogatyrev, Yu. K.

53
B

ORG: Scientific-Research Institute of Radiophysics, Gor'kiy University
(Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete)

TITLE: Doubling the frequency of light emitted by a Q-switched laser 75

SOURCE: IVUZ. Radiofizika, v. 9, no. 4, 1966, 715-719

TOPIC TAGS: laser, laser R and D, pulsed laser, ~~Q-switching~~

ABSTRACT: The characteristics of double frequency pulses produced in lasers by external doubling and by inside-resonator doubling are compared (calculated on a digital computer). It is found that, with small conversion factor K of the nonlinear element, the inside-resonator doubling is more efficient; with large K , the external doubling is more efficient. Here, $K = P_{2\omega} / P_{\omega}^2$, where P_{ω} is the energy of the fundamental-frequency wave falling on the nonlinear element and $P_{2\omega}$ is the double-frequency energy at the nonlinear element output. For a nonlinear element placed inside the resonator, an optimal K exists at which the double-frequency output is maximum. It is evident that for nonlinear element placed outside the resonator, the double-frequency power increases in proportion to K . Plots of $P_{2\omega}$ vs. K for both nonlinear-element locations show that the frequency converter should be placed

Cord 1/2

UDC: 621.378.325.001

L 43921-66

ACC NR: AP6026935

inside the resonator when the conversion factor is relatively small, the crystal length is about 2 cm, and the resonator-Q switching time is short. Orig. art. has: 4 figures and 5 formulas.

[03]

SUB CODE: 20, 09 / SUBM DATE: 04Nov65 / ORIG REF: 002 / ATD PRESS: 506 /

Card 2/2

L 37923-66 FBD/EWT(1)/EEC(k)-2/T/ENP(k) IJP(c) WG

ACC NR: AP6022078

SOURCE CODE: UR/0141/66/009/003/0525/0537

AUTHOR: Bespalov, V. I.; Bogatyrev, Yu. K.

ORG: Scientific-Research Institute of Radiophysics, Gor'kiy University
(Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete)

TITLE: Laser with Q-switched resonator

SOURCE: IVUZ. Radiofizika, v. 9, no. 3, 1966, 525-537

TOPIC TAGS: solid state laser, Q switching, laser R and D, laser theory

ABSTRACT: So far, only a simplest model of the Q-switched laser has been analyzed (e. g., M. F. Lee, Appl. Optics, 3, 417, 1964; A. A. Vuylsteke, J. Appl. Physics, 34, 1615, 1963). Due to the simplifying assumptions made in the previous works, many important points have never been completely investigated. The present article offers the results of a numerical (computer) solution of a system of differential equations that describe the processes transpiring in a 3-level laser; the working substance is assumed to be concentrated in the homogeneous region of the field in a single-mode resonator. The solution was found by the Runge-Kutta method with an automatic interval selection; the computation error is claimed to be 0.01 or less. The modulators with polarization switching (crystal) and with a rotating mirror (prism) are considered. The effects of the finite switching speed, resonator frequency deviation (from the mean frequency of molecular transition), finite

Card 1/2

UDC: 621.378.325

L 37923-66

ACC NR: AP6022078

relaxation time, resonator-mirror transmissivity, etc. upon the fundamental
radiated pulse parameters (shape, duration, power) are clarified. Orig. art. has:
12 figures and 13 formulas.

[03]

SUB CODE: 20 / SUBM DATE: 10Sep65 / ORIG REF: 006 / OTH REF: 004

Card 2/2 MLP

ACC NR: AP7008265

SOURCE CODE: UR/0141/67/010/001/0128/0131

AUTHOR: Bogatyrev, Yu. K.; Rabinovich, M. I.

ORG: Scientific Research Institute of Radiophysics at Gor'kiy State University

TITLE: Investigation of self-oscillation in an active ring line

SOURCE: IVUZ. Radiofizika, v. 10, no. 1, 1967, 128-131

TOPIC TAGS: electronic circuit, electronic component, *TRAVELING WAVE, TUNNEL DIODE, OSCILLATION*

ABSTRACT: The results are reported of an experimental study of self-oscillations of the stationary traveling waves type in a closed ring artificial LC line with tunnel diodes. An experimental artificial LC-line with tunnel diodes consisted of 30 identical sections. The parameters of single sections were equal with an accuracy of 1%. Fifteen modes of stationary traveling waves were observed in the investigated line. The data obtained demonstrate that with an increase in the number of the mode, the frequency increases while the amplitude decreases. The shape of stationary waves with a decrease of λ continuously changes from relaxation to sinusoidal. The dependence of the character of self-oscillations on the dispersion in the system was experimentally confirmed. Self-oscillations in the shape of stationary

Card 1/2

UDC: 621.372.22

ACC NR: AP7008265

traveling waves are stable with respect to small disturbances of initial data as well as to small variations of system parameters. It is concluded that such systems can be used in various discrete devices where the presence of many types of stable oscillation could be useful. In addition, such a system can be utilized as a tunable relaxation generator. Orig. art. has: 4 figures and 3 formulas. [GS]

SUB CODE: 09/ SUBM DATE: 30Mar66/ ORIG REF: 006

Card 2/2

117 AND 118 COLUMNS										119 AND 120 COLUMNS									
PROCESSING AND PROPERTY INDEX																			
<div style="display: flex; justify-content: space-between;"> 5 10 </div> <p>ELECTRIC HEAT TREATMENT OF STEEL PARTS. Yu. M. Boratyrev and S. A. Lagerkvist. (Vestnik Metallopromyshlennosti, 1939, No. 6, pp. 65-70). (In Russian). Results obtained using the Ceveling method of surface-hardening on lathe spindles are discussed. This method, in which heat is generated by the electrical resistance between a roller and the surface of the parts being treated, eliminated all deformation of the parts. To obtain a good surface finish, a reliable contact between the roller and the surface being treated is necessary. Surface cracks may be prevented by using warm water or an emulsion as a quenching medium. If required, the changes in depth of the hardened layer arising from the mechanism of the hardening process used can be eliminated by low-temperature tempering. The depth of the hardened and transition layers may be varied within wide limits.</p>																			
<div style="display: flex; justify-content: space-between;"> ASIA-51A METALLURGICAL LITERATURE CLASSIFICATION 6-2 </div>																			
<div style="display: flex; justify-content: space-between;"> 121 AND 122 COLUMNS 123 AND 124 COLUMNS </div>																			

